



DEPARTMENT OF THE NAVY

NAVAL SEA SYSTEMS COMMAND
1333 ISAAC HULL AVENUE
WASHINGTON NAVY YARD DC 20376-2101

IN REPLY REFER TO

5720

Ser SEA 00A5/DON-NAVY 2017-011072F
July 5, 2018

Mr. Michael Lassiter
916 Oxford Circle
Papillion, NE 68046

SUBJECT: FREEDOM OF INFORMATION ACT CASE DON-NAVY 2017-011072

Dear Mr. Lassiter:

This is a final response to your September 27, 2017, Freedom of Information Act (FOIA) request in which you seek any and all records directing the implementation, non-implementation, concurrence, non-concurrence or other decision and any records regarding environmentally assisted cracking found in the steel piping in the forward compartment, results of destructive or nondestructive testing and any repair planning and progress as a result of the fire aboard the USS MIAMI on May 23, 2012.


A thorough search of this Headquarters files was conducted, specifically those files located within the Program Executive Office Submarines (PEO SUBS). Knowledgeable personnel with that office conducted a search of their files and identified a Report to Congress on the USS MIAMI, Updated Damage Assessment, Proposed Plan and Cost Estimate dated August 2013 as responsive to your request.

After careful review of those documents I determined that they may be released to you in their entirety. Therefore, I am granting your request under the FOIA (5 U.S.C. S552), and Secretary of the Navy Instruction 5720.42F.

Fees for processing your request are being waived in this instance since your request was not processed within 20 working days. However, fees are assessed on a case-by-case basis and you may be charged fees for future requests.

If you have any questions concerning the status of your request, please contact Ms. Ginger Dolan by telephone 202-781-3359 and cite the case number provided above. You can also email us at navseafoia@navy.mil.

Sincerely,


DONNA M. HAMLIN
By direction

Enclosure



THE SECRETARY OF THE NAVY
WASHINGTON DC 20350-1000

August 9, 2013

The Honorable Carl Levin
Chairman, Committee on
Armed Services
United States Senate
Washington, DC 20510-6050

Dear Mr. Chairman:

The enclosed report provides the congressional defense committees an updated damage assessment, proposed plan, and updated cost estimate for USS MIAMI (SSN 755) pursuant to language in Senate Appropriations Committee Report (Senate Report 112-196) to accompany H.R. 5856, the Fiscal Year 2013 Department of Defense Appropriations Bill.

On May 23, 2012, a shipyard worker intentionally started a fire aboard USS MIAMI during a planned maintenance period. A large portion of the submarine's forward compartment mid and upper level sustained extensive damage while the lower level experienced water and corrosive damage. Soon after the fire, Navy committed to restoring USS MIAMI. At the time, Navy estimated it would be able to re-deliver USS MIAMI in April 2015 at a cost of up to \$500 million to both repair the ship and account for secondary effects including moving planned submarine maintenance work to private shipyards. As the Navy conducted its assessment of the damage, it became clear that it could cost up to \$700 million to return USS MIAMI to service. The additional cost is due to finding unanticipated damage coupled with anticipated budgetary challenges. Consequently, the Navy will be forced to inactivate USS MIAMI without substantial congressional action.

A similar letter has been sent to Chairmen McKeon, Durbin, and Young. As always, if I can be of further assistance, please let me know.

Sincerely,

A handwritten signature in dark ink, appearing to read "Ray Mabus", is written over the typed name.

Ray Mabus

Enclosure:
As stated

Copy to:
The Honorable James M. Inhofe
Ranking Member



THE SECRETARY OF THE NAVY
WASHINGTON DC 20350-1000

August 9, 2013

The Honorable Howard P. "Buck" McKeon
Chairman, Committee on
Armed Services
House of Representatives
Washington, DC 20515-6035

Dear Mr. Chairman:

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Sincerely,

Ray Mabus

Enclosure:
As stated

Copy to:
The Honorable Adam Smith
Ranking Member



THE SECRETARY OF THE NAVY
WASHINGTON DC 20350-1000

August 9, 2013

The Honorable Richard J. Durbin
Chairman, Subcommittee on
Defense
Committee on Appropriations
United States Senate
Washington, DC 20510

Dear Mr. Chairman:

The enclosed report provides the congressional defense committees an updated damage assessment, proposed plan, and updated cost estimate for USS MIAMI (SSN 755) pursuant to language in Senate Appropriations Committee Report (Senate Report 112-196) to accompany H.R. 5856, the Fiscal Year 2013 Department of Defense Appropriations Bill.

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Sincerely,


Ray Mabus

Enclosure:
As stated

Copy to:
The Honorable Thad Cochran
Ranking Member



THE SECRETARY OF THE NAVY
WASHINGTON DC 20350-1000

August 9, 2013

The Honorable C. W. Bill Young
Chairman, Subcommittee on
Defense
Committee on Appropriations
House of Representatives
Washington, DC 20515

Dear Mr. Chairman:

The enclosed report provides the congressional defense committees an updated damage assessment, proposed plan, and updated cost estimate for USS MIAMI (SSN 755) pursuant to language in Senate Appropriations Committee Report (Senate Report 112-196) to accompany H.R. 5856, the Fiscal Year 2013 Department of Defense Appropriations Bill.

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Sincerely,


Ray Mabus

Enclosure:
As stated

Copy to:
The Honorable Peter J. Visclosky
Ranking Member

REPORT TO CONGRESS

ON

USS MIAMI (SSN 755)

Updated Damage Assessment, Proposed Plan,

and

Updated Cost Estimate

August 2013

Prepared by:
Naval Sea Systems Command
1333 Isaac Hull Ave.
Washington, DC 20376

The estimated cost or study for the Department of
Defense is approximately \$15,000 for Fiscal Years 2012-2013.
This includes \$8,500 in expenses and \$6,490 in DoD labor.

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1. Requirement

This report provides the congressional defense committees an updated damage assessment, proposed plan, and updated cost estimate for USS MIAMI pursuant to the following language in Senate Appropriations Committee Report (Senate Report 112-196) to accompany H.R. 5856, the Fiscal Year 2013 Department of Defense Appropriations Bill:

USS Miami.—Subsequent to the fiscal year 2013 budget submission, the USS Miami experienced fire damage during a regularly scheduled maintenance availability. The Committee recommends an additional \$150,000,000 only for repairs to the USS Miami and directs that none of those funds may be obligated or expended until 30 days after the Secretary of the Navy provides to the congressional defense committees an updated damage assessment, the Navy's proposed plan for the USS Miami and an updated cost estimate.

2. Executive Summary

The Navy completed updated estimates of the scope of work and cost for repairing USS MIAMI. Based on these revised estimates and constrained operations and maintenance funds due to sequestration, inactivating MIAMI is the most prudent and fiscally responsible decision. The Navy does not have sufficient resources to fund the revised cost estimate of \$700M.

The fire damage assessment completed in July 2013 examined structural, mechanical and electrical systems and concluded MIAMI is fully repairable. The assessment was not completed until July because of its complexity, the identification of more extensive corrosion damage than expected, and the shortage of personnel at the shipyard and Naval Sea Systems Command to define and estimate the costs for the work. As a result, most of the MIAMI repair would not be conducted until FY14.

FY13 sequestration resulted in the deferral of other ship maintenance from FY13 to FY14. The Navy cannot afford to repair MIAMI given these deferrals and possible sequestration in FY14. Without Congressional assistance to provide additional resources or end sequestration, the Navy is compelled to inactivate MIAMI.

3. Background

MIAMI began a 19.6 month Engineered Overhaul (EOH) at Portsmouth Naval Shipyard (PNSY) in Kittery, Maine, on March 15, 2012. On May 23, 2012, an arsonist started a fire in an officer stateroom in the submarine's forward compartment, middle level. As is standard procedure for a submarine undergoing a major maintenance availability, MIAMI's crew was not living on board; the stateroom at the time was used as storage space. The fire was not promptly detected. The fire burned for nearly 10 hours, causing extensive fire damage to the upper two levels of the ship with water and smoke damage to the lower level. There were no fatalities.

All weapons, the ship's battery and most of the sonar and fire control electronics had been removed before the fire. The nuclear reactor was unaffected; it had been shut down for two months and was monitored throughout the fire.

Congress authorized \$100M in FY12 Navy funds to be reprogrammed in the FY12 Omnibus reprogramming authorization and appropriated \$150M for MIAMI fire repairs in Public Law 113-6, the Consolidated and Further Continuing Appropriations Act of 2013.

Where possible, EOH work has continued during the fire damage assessment and repair planning. Fire restoration work began in parallel with the assessment effort and consisted of clean-up, initial installation of early identified repairs (e.g. deck replacement, frame straightening, etc.) and purchase of repair material (e.g. cabling, piping, steel plate, lights, fixtures, furnishings, etc.). As of July 2013, about \$50M of the \$100M of FY12 funds provided were expended on planning, procurement, fabrication and initial repairs.

4. MIAMI Damage Assessment

The MIAMI damage assessment consisted of a structural assessment, mechanical systems assessment, electrical systems assessment, and a combat systems assessment. Engineering reviews were conducted to determine the requirements for physical inspections which were subsequently completed in July 2013. However, the impact of the fire damage will not be fully known until all systems are inspected during repair.

Structural Assessment:

The structural assessment evaluated pressure hull plating, framing, inserts, welds, and hull integrity castings in the heat-affected areas. The fire's heat had the potential to affect the material properties, soundness, or geometry of the pressure hull structure in MIAMI's forward compartment. A variety of testing techniques were employed to determine the scope of repairs or additional engineering analysis required. The testing indicates that no major pressure hull repairs are required.

Findings: Required structural repairs are limited to the replacement of one hull insert and one hatch, replacement of the starboard forward compartment upper level deck and the correction of four out-of-tolerance hull frame tilt angles. The hull frame corrections are complete, and the others are in progress.

Mechanical Systems Assessment:

For the mechanical assessment, Navy developed a Material Damage Matrix (MDM), a catalog of all metals used in submarine mechanical system construction and their associated vulnerabilities to fire and evolved gas exposure. To determine inspection requirements, Navy reviewed the mechanical systems in the forward compartment in accordance with the MDM. In doing so, Navy executed 283 mechanical assessments and more than 50 comprehensive system-level inspections.

Findings: Inspections revealed Environmentally-Assisted Cracking (EAC) in steel piping and fasteners used in air, hydraulic, and cooling water systems. Due to the nature of the cracking, a

significant number of components in the torpedo room and auxiliary machinery room will require replacement. Although the Navy was aware of the possibility, EAC did not manifest itself until months after the initial inspections in December 2012. Navy initially identified EAC in April 2013, but did not understand the full scope and cost until May 2013. The estimated cost of EAC repairs is approximately \$50M, consuming the \$50M reserve in Navy's initial MIAMI repair cost estimate. Schedule impact is under development and not yet fully known.

Note: EAC can be explained as cracking in metals due to the combination of a susceptible material (in this case, steel), a corrosive environment, and tensile stress. In MIAMI's case, the susceptible materials of concern include steel piping and fasteners that are under tensile stress (e.g. torqued bolts, piping in high-pressure systems). Contaminants in the smoke from the fire provided the corrosive environment.

Electrical Systems Assessment:

The electrical system assessment consisted of engineering reviews and inspections of electrical cables, junction boxes, switchboards, motors, and electrical components.

Findings:

- Thousands of feet of damaged cables require replacement and must be spliced with existing cables.
- Forward Compartment Upper Level and Middle Level electrical components require replacement. Wherever possible, components from inactivated ships will be used.
- Forward Compartment Lower Level electrical components will require repair or replacement as determined by the assessment inspections.
- Diesel Generator Electrical Rotor and Stator repairs are complete.

Combat System Assessment:

The combat systems assessment inspected various electrical and mechanical combat systems, such as the Weapons Launch Console (WLC), torpedo tubes and support systems, and the 3-inch launcher.

Findings:

- WLC requires removal and refurbishment off of the ship. The WLC has been removed and repairs are in progress.
- All communications, navigation, fire and weapon control, and electronic warfare equipment has been offloaded and will be restored or replaced as part of scheduled modernization.

5. Updated Cost Estimate

The original estimate of MIAMI fire repairs was about \$450M, which included \$50M to shift USS PROVIDENCE's Dry-docking Selected Restricted Availability (DSRA) to the private sector because it has been displaced by MIAMI repair work. The estimated cost for MIAMI fire repairs is now \$700M. The increase in estimated cost includes sequestration effects combined with work loading at PNSY (\$50M), increased cost to repair EAC (\$50M), and an increase in the future contingency amount (\$150M). These estimates are based on what has been learned in the

damage assessment described in Section 4 above. A final cost estimate will not be available until March 2014. A more detailed discussion follows:

Sequestration effects and work loading at PNSY trigger shift in work from public to private sector (estimated cost: \$50M)

- PNSY entered FY13 with a funded, fixed capacity workforce. Three factors reduced the workforce available to accomplish fire recovery and EOH repairs on MIAMI by about 50,000 man-days:
 1. Sequestration impacts (hiring freeze, overtime limits) reduced the available workforce.
 2. A heavy workload on other high-priority projects shifted resources from MIAMI.
 3. The MIAMI damage assessment proved more complex than anticipated, pushing planned FY13 fire recovery and forward compartment EOH repairs into FY14.

Since PNSY will be fully employed with other previously planned work through FY14, additional private sector repair capacity will be required to complete MIAMI repairs.

- Electric Boat Corporation (EB) has capacity available in FY14 and FY15 to accomplish all fire recovery and forward compartment EOH work. This labor, with travel, per diem, and overhead, will cost the Navy \$50M (based upon a projected 50,000 man day level of effort).

Consumption of original contingency by EAC: \$50M

- Navy initially identified EAC in April 2013, but did not understand the full scope and cost until May 2013. The updated estimated cost of these repairs is approximately \$50M.

Increased Future Contingency Reserve: \$150M

- Cost data from other comparable major collision damage repair efforts, specifically the USS HARTFORD sail replacement and USS MONTPELIER hull and rudder repairs (in progress), shows final cost falls between 140% to 150% of the initial repair rough order of magnitude (ROM) estimate. Both data points help the Navy understand and appreciate the complexity and scope of repairs required to recover from major submarine damage. It is prudent to apply this cost insight to MIAMI. Given MIAMI's original repair estimate of \$400M (not including USS PROVIDENCE outsourcing), an appropriate contingency reserve equates to \$160M to \$200M. \$50M has been consumed, leaving a requirement of \$150M for future growth, which is unfunded.
- In addition to scope growth, the additional \$150M contingency reserve will cover underperformance due to known or unknown events. For example, Navy cannot accurately price the known impacts of an anticipated FY14 sequestration at PNSY, which will diminish PNSY's ability to provide support services (cranes, ventilation, electricity, service air, etc.) for EB's execution of production work.

Additionally, for the following reasons, neither EB nor the Navy was in a position to negotiate a completion contract in FY13. The contracting action and associated funding requirement were shifted from FY13 to FY14. Reasons for this include:

- The MIAMI damage assessment was originally scheduled to be completed in November 2012. Due to the unique nature of this repair effort, the assessment proved much more

complex than anticipated and did not complete until July 2013. Sequestration impacts at PNSY reduced engineering resources and were also a factor. This delay caused a ripple effect in work scope definition, planning and start of execution.

- As the Navy gained a better understanding of the repairs required, the number of engineering drawings requiring review and update increased from 800 to 1100 and continues to grow. The increased design effort has also delayed planning and execution. Without a clearly defined scope of work, the Navy and EB cannot enter into a contract.
- Other near-term, high priority contracting efforts (VIRGINIA Class Block IV contract negotiations, Moored Training Ship, and USS PROVIDENCE (SSN 719) availability) compete for limited expertise (negotiating, cost estimating, etc.) at EB and NAVSEA.
- Furloughs caused a 20 percent capacity reduction in available NAVSEA Contracts, Program Office, and Supervisor of Shipbuilding Groton (SOSG) manpower between now and the end of the Fiscal Year.

The table below shows the original FY12 funding, the FY13 repair funds provided by Congress, and the additional FY14 and FY15 funds required to complete MIAMI restoration. Navy's PB14 request does not reflect these amounts; they are entirely beyond the Navy's ability to fund.

Updated MIAMI Projected Costs (\$M) - Continue fire Repair	FY12	FY13	FY14	FY15	Total
Planning, design, fire damage clean up, material procurement	95.0				95.0
Fire damage repair		104.0	248.0	2.0	354.0
PNSY FY13 sequestration induced resources issues			50.0		50.0
USS PROVIDENCE avail cost (shifted to private sector)	5.0	46.0			51.0
Required Contingency			92.0	58.0	150.0
Total	100.0	150.0	390.0	60.0	700.0

Estimated FY14-FY15 Funds required to repair MIAMI		450.0	
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6. USS MIAMI Plan

With the increased cost estimate, shifting of MIAMI repair to FY14 and anticipated sequestration impacts, the MIAMI fire repairs will create an additional FY14 shortfall of \$390M in the Ship Depot Maintenance account (1B4B). Sequestration has already caused the Navy to defer maintenance from FY13 to FY14 and if sequestration continues in FY14 the Navy will be forced to cancel as much as 60% of scheduled major maintenance availabilities. Funding repair of MIAMI in this environment exacerbates an already untenable fiscal situation and would come at the expense of other critical ship maintenance availabilities. Given these fiscal realities, without top-line budget relief, the Navy intends to cease repair efforts and inactivate MIAMI. Inactivation will start in September 2013 and complete in May 2015 without impacting other scheduled work.

The table below shows how the appropriated FY12 & FY13 funds would be used to support the inactivation and defueling of MIAMI.

MIAMI Projected Costs (\$M) – Inactivate	FY12	FY13	FY14	FY15	Total
Planning, design, fire damage clean up, material procurement	51.0				51.0
Fire damage repair		7.7			7.7
USS PROVIDENCE avail cost (shifted to private sector)	5.0	46.0			51.0
MIAMI Inactivation (PNSY executed)		54.0			54.0
Funds available for reprogramming to other ships' maintenance needs	44.0	42.3			86.3
Total	100.0	150.0			250.0

To support this plan, the Navy will seek to reprogram:

- \$54M of FY13 MIAMI repair funds from budget line item 1B4B (Ship Depot Maintenance) to 2B2G (Ship Activations/Inactivations).
- \$42.3M of FY13 MIAMI repair funds for other critical FY13 submarine and ship maintenance needs.

Per Senate Report 112-196, the Navy provides 30-day congressional notification for the below actions:

- In order to support MIAMI fire repairs, Navy shifted PROVIDENCE's maintenance to the private sector and considers the cost as part of the MIAMI fire repair. It has been briefed as such to Congress. The Navy used \$5M of the \$100M FY12 funds reprogrammed for MIAMI repairs for PROVIDENCE maintenance planning, and will use \$46M of the \$150M FY13 appropriated MIAMI repair funds on private sector maintenance for PROVIDENCE. Since this action is within the scope and Congressional intent of this appropriation, reprogramming is not required.
- The Navy will spend \$7.7M of the \$150M FY13 appropriated MIAMI repair funds on MIAMI fire damage repairs conducted in FY13.

7. Summary

The Navy no longer has the ability to fund USS MIAMI fire repairs. The increase in estimated repair costs and the shift to FY14 execution exacerbates an already untenable fiscal situation and would come at the expense of other critical ship maintenance availabilities. Inactivating MIAMI frees resources for other critical nuclear submarine maintenance, yielding immediate and measurable increases in overall operational availability. Additional FY14 funding of at least \$390M is required to repair MIAMI without significant negative impact to fleet and submarine readiness. Ultimately, repair costs could exceed the updated projections due to the factors discussed in Section 5. Thus, it is the Navy's intent to reprogram MIAMI repair funds to support her inactivation.